DOCUMENT RESUME

ED 139 689 SO 010 019

AUTHOR Harris, Roma M.; Highlen, Pamela S.
TITLE Depression, Decision-Making, and Perception of Control.
PUB DATE Apr 77
NOTE 20p.; Paper presented at Annual Meeting of the American Educational Research Association (New York, New York, April 3-8, 1977)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Behavioral Science Research; College Students; Comparative Analysis; Data Analysis; *Decision Making Skills; *Emotional Problems; Measurement; Mental Health; Psychological Characteristics; Psychological Patterns; *Psychological Studies; Psychological Testing; Sex Differences; *Social Behavior

ABSTRACT

The relationship between external reinforcement of behavior and depression is explored. Specifically, the psychological study measures the role of cognition in depression by comparing decision-making problems, lack of assertiveness, and perceptions of control in male and female undergraduate college students and psychiatric patients. It was hypothesized that the expectancy of external control would be associated with decision-making difficulty, choice inconsistency, depression, and lack of assertiveness. Procedure included administering decision-making and choice inconsistency tests to a sample of 102 college students and measures of depression and lack of assertiveness to additional samples of college students and psychiatric patients. Results indicated that externality was consistently and, often, significantly correlated in the predicted direction with decision-making, depression, and assertiveness. However, this relationship seemed to vary in intensity across sex and situation. Thus, it was concluded that externality in males is associated with decision-making difficulty and choice inconsistency, while externality in females is more closely associated with depression and lack of assertiveness. Implications of these data for the treatment of externally controlled clients through cognitive restructuring and training of specific behavioral skills are discussed. (Author/DB)

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Depression, Decision-Making, and Perception of Control

Roma M. Harris and Pamela S. Highlen

University of Western Ontario

SO 010 019

We wish to thank the patients and staff of the St. Thomas Psychiatric Hospital for their time and assistance, with special thanks to Ms. Beatrix Horn.

Requests for reprints should be forwarded to Roma Harris, Department of Psychology, University of Western Ontario, London, Ontario, Canada N6A 5C2

Small Roundtable presentation at the American Educational Research Association in New York City, New York, April 4-8, 1977.

Over the last decade, many researchers have been independently examining three major areas: locus of control (e.g., Rotter, 1966), learned helplessness or experimentally-induced depression (e.g., Seligman, 1975), and clinical depression (e.g., Beck, 1967). Examination of these theoretical constructs, as well as research generated by each, suggests that they may be interrelated. For example, locus of control and learned helplessness theories focus on the relationship between the contingency of response and reinforcement.

According to social learning theory, the situation through which expectancies about reinforcement are generated is the primary determinant of behavior (Rotter, 1966). The locus of control of reinforcement is one of the most important of these expectancies. This control may be perceived to be internal, meaning that an individual expects reinforcements to be contingent upon his/her own responses, or the expectation may be of external control which means that an individual regards his/her responses and reinforcements to be independent.

Marked differences along a variety of dimensions have been noted between people with "internal" and "external" orientations. For example, Joe (1971) reported that people perceiving control to be internal tended to show more initiative in controlling their environments as well as more impulse control than externally controlled persons. Internals were also found to exhibit more information-seeking behaviors and more interest in achievement-related activities than externals. In addition, Hersch and Scheibe (1967) found that externals chose fewer favorable and more unfavorable self-descriptive adjectives than internals.

Likewise, the relationship between expected control and behavior is central to learned helplessness. The theory of learned helplessness postulates that the lack of contingency between response and consequence causes behavior which is typified by listlessness, apathy, and passivity (Seligman, 1975). Helpless responding typically involves lowered response initiation and a reduced ability to learn that responding produces reinforcement (Klein, Fencil-Morse, and Seligman, 1976). Because these characteristics of learned helplessness resemble the symptom cluster associated with clinical depression, Seligman (1975) has proposed that his model of learned helplessness is a laboratory analog of depression. Within a clinically depressed population, Beck (1967) has observed a sense of worthlessness, apathy and a lower response rate, thus lending clinical support for Seligman's thesis. Empirical support has also been provided by Byrne (1976), who found that both decision time and movement time were longer in depressives than normals.

Thus, it would seem that there is a convergence in symptomotology displayed by people who are experiencing clinical depression, experimentally-induced depression, or who perceive themselves to be externally controlled. Passivity, lowered activity rates, and listlessness seem to characterize these three groups. The convergence of these data suggest that Seligman's model can be indirectly tested through the locus of control construct. If the perceived lack of contingency between response and reinforcement produces depression, then an external locus of control perception should be highly correlated with depressive symptoms. The depressive symptoms of decision-making difficulty and

passivity or unassertiveness were chosen for this investigation. Locus of control and learned helplessness research supports the choice of these factors. For example, Miller and Seligman (1975) reported that externally-controlled and mildly depressed students expressed a significant lack of optimism with respect to outcomes based on their own skilled actions. Furthermore, Beck (1967) noted that in the area of decision-making, depressed individuals tend to vacillate and be indecisive. Because depressed individuals expect to make incorrect decisions, they are not only slow in reaching decisions, but they also tend to change decisions once they are made (Beck, 1967). In a review of the locus of control literature, Lefcourt (1976) reported data which suggest that externals tend to give most attention and deliberation to chance-determined tasks.

Research has also demonstrated the relationship between externality and passivity. Seligman (1975) found that subjects who had experienced conditions of inescapable noise (learned helplessness) showed changes in their expectations for successs. They began to treat their successes or failures on skill tasks as though they were due to chance. Hiroto (1974) has found that externally-controlled subjects became more helpless than internals after having experienced inescapable noise. Finally, Bax (1966), as reported by Lefcourt (1976), found that people who are externally controlled tend to be unassertive as well.

Study 1 examined the relationship between locus of control and a self-report measure of decision-making difficulty and consistency of item choice on a vocational interest test. It was predicted that externality would be related to a greater expression of decision-making

difficulty and to greater inconsistency of choice than internality. In Study 2, the relationship between locus of control, depression, and assertiveness was examinined in samples of college students and hospitalized psychiatric patients. It was predicted that the expectancy of external control would be related to high levels of self-reported depression and low assertiveness, and that scores in the psychiatric samples would be higher on all measures than those of the students.

STUDY 1

Method

Subjects

Thirty-five male and 67 female introductory psychology students participated in the experiment. All volunteers received academic credit for their participation.

Instruments

Locus of control. Subjects were administered the Nowicki-Strickland Locus of Control Scale for Adults (ANSIE) (Nowicki & Duke, Note 2). The ANSIE is a 40-item test designed to assess perceived locus of control. It has a split-half reliability of from .74-.86, and test retest reliability of .83 over a six-week period (Nowicki & Duke, Note 2).

Decision difficulty. Subjects were administered the revised decision difficulty checklist (DDC) which is a 22-item scale developed to tap an individual's perception of his/her difficulty in making decisions across four areas of concern. The four subscales of the test have internal consistency reliabilities which range from .80 to .84 (Mendonca, 1974).

Vocational preference. Subjects also received the Jackson Vocational Interest Survey (Form E - JVIS) (Jackson, 1973). JVIS items were empirically selected from a large pool of items which had been rationally developed for each scale. These items were administered to groups totalling approximately 1400 individuals. Factor analysis procedures were employed in item selection which were designed to suppress response bias and insure that each item was most highly associated with its own factor. A total of 289 items pairs were thus assembled, 17 for each of 34 scales.

Validity data for the JVIS have been obtained from a variety of sources. For instance, unique replicable profiles for students in each of 13 college majors have been identified at the Pennsylvania State University (Jackson, Note 1). The draft JVIS manual also contains data bearing on its relationship with other vocational interest tests and on self ratings of interests (Jackson, Note 1).

Procedure

Subjects were administered the JVIS, DDC, and ANSIE in counterbalanced order. Six weeks later, 19 males and 37 females returned and were re-administered the JVIS.

Results

As predicted, the expression of decision-making difficulty on the DDC was related to externality on the ANSIE. However, this relationship was only significant for the male sample, $r = .43$, $t(33) = 2.72$, $p < .005$. For the female sample, this relationship was not significant, although the trend was in the predicted direction, $r = .19$, $t(61) = 1.51$, $p < .10$. Correlations obtained between ANSIE and JVIS change scores were

significant for both the male and female samples. As predicted, externality was related to choice inconsistency, although this was more pronounced for males, $r = .49$, $t(17) = 2.18$, $p < .025$, than for females, $r = .29$, $t(35) = 1.79$, $p < .05$.

Consistent with previous research (e.g., Nowicki & Duke, Note 2), sex differences were obtained on the ANSIE. Females ($\bar{x} = 10.40$) scored significantly more external than males ($\bar{x} = 8.06$), $t(100) = 2.67$, $p < .005$. However, no differences were found between males and females on either the DDC or the JVIS-change measures, $t(96) = .58$, $p < .35$, and $t(54) = 1.14$, $p < .20$.

Discussion

The results from this study support the use of externality as a predictor of depressive decision-making patterns which are characterized by indecisivieness and vacillation. Specifically, externality was found to correlate significantly with decision-making difficulty in the male sample, and with inconsistency of choice in both male and female samples. These results indicate that the relationship between externality and problems with the decision process are more pronounced in males than females. This unexpected sex difference is not accounted for by Seligman's learned helplessness paradigm.

In Study 2 the relationship between externality, depression and assertiveness were examined.

STUDY 2

Method

Subjects

Samples from two different populations participated in this study.

The college sample was composed of 67 male and 49 female psychology students who received academic credit for their participation. The second sample consisted of 25 male and 21 female hospitalized psychiatric patients who had been recently admitted to a large psychiatric hospital in southwestern Ontario.

Instruments

The following inventories were administered to each subject in counter-balanced order.

Assertiveness. Subjects were administered the Assertion Inventory (Gambrill & Richey, 1975). This is a 40-item self-report inventory which permits respondents to note for each item their degree of discomfort and their probability of engaging in a behavior across a variety of situations. It has a test-retest reliability of .87 for discomfort and .81 for response probability.

Depression. Subjects were asked to complete the Depression Inventory (DI) (Beck, 1967). This is a 21-item instrument which was designed to measure the depth of depression. It attempts to tap the intensity of each of the major symptom clusters commonly associated with depression. Each of the 21 items describes a specific behavioral manifestation of depression and consists of a graded series of four to five self-evaluative statements.

The DI has a split-half reliability of .86. (Test-retest reliability is not applicable in such a measure because of shifts in intensity of depression in psychiatric patients).

Locus of Control. As in Study 1, the ANSIE (Nowicki & Duke, Note

2) was given to all subjects.

Results

Sample and Sex Differences

Differences between males and females in the college and psychiatric samples are presented in Table 1. Across samples, female psychiatric

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Insert Table 1 about here

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patients scored significantly higher than college females on all measures except the Assertion Inventory Response Probability Scale. Likewise, male psychiatric patients scored significantly higher than college males on the ANSIE and DI. However, there were no significant differences on both the Discomfort and Response Probability Scales of the Assertion Inventory.

The comparison between male and female psychiatric patients on the ANSIE revealed that females scored significantly more external than the males, $t(43) = 2.39$, $p < .025$. However, no other significant sex differences were found within the psychiatric or college sample.

Depression

Correlations between the ANSIE and DI are presented in Table 2. The predicted relationship between externality and depression was found in both the college female subjects, $r = .62$, $t(47) = 5.47$, $p < .0005$, and the hospitalized females, $r = .47$, $t(19) = 2.29$, $p < .025$. However, in both male samples, none of the correlations were significant, although they were in the predicted direction.

Insert Table 2 about here

Assertiveness

Correlations between the ANSIE and the two scales of the Assertion Inventory are located in Table 2. The predicted relationship between externality and the Assertion Inventory's discomfort scale was found in all groups except the male psychiatric sample. On the response probability scale, externality was significantly correlated with lack of assertiveness in all but the male college sample. As with depression, the relationship between unassertiveness and externality was significant for the female samples, with mixed results for the two male groups. Therefore, the relationship between externality and lack of assertiveness was stronger for females.

Discussion

As predicted, the results from this study indicated that the psychiatric sample consistently scored higher on externality, depression, and lack of assertiveness than the college sample. This result is not surprising since the hospital environment is one in which patients lose personal control and self-determination.

The predicted relationship between externality and depression was only significant for both female samples. Lower probability for assertive behavior was significantly correlated with externality for all groups except college males, as were the assertive discomfort scores in all but the psychiatric male sample. The magnitude of the correlations obtained in this study indicated that externality is a better predictor of depression and low assertiveness for females than for males. This differential sex

effect is not accounted for in the learned helplessness model.

GENERAL DISCUSSION

The results from Studies 1 and 2 lend support to the use of externality as a predictor of symptoms from the depressive symptom cluster. Specifically, externality was consistently correlated in the predicted direction with decision-making, depression, and assertiveness, and often times these correlations were significant. However, this relationship seemed to vary in intensity across sex and situation. Thus, from an overall perspective, it appears that externality in males is associated with decision-making difficulty and choice inconsistency, while externality in females is more closely associated with depression and lack of assertiveness.

This rather confusing and unexpected pattern of sex differences has important implications for both Seligman's learned helplessness model and for the treatment of clients identified as externally controlled. In terms of Seligman's experimental analog of depression, these data suggest that serious attention must be given to possible sex differences in subjects' reactions to the learned helplessness experience. Clearly, differential predictions are necessary to account for sex differences in externality across the depressive symptom cluster. One method for examining the question of sex differences empirically is to employ Meichenbaum's technique (cf. Meichenbaum & Turk, 1976) for examining the inner dialogue of individuals who have experienced experimentally-induced depression. This technique would focus on the nature of the cognitive or thinking deficits associated with externality to ascertain whether these cognitive deficits are sex related.

These data, likewise, have implications for the treatment of externally controlled clients. Since the results indicate that externally controlled males are most likely to manifest their difficulties in the realm of decision-making, an appropriate intervention would be the presentation and modeling of problem-solving skills. However, for externally controlled female clients, the therapist might more appropriately look for deficits in assertive behaviors, and plan his/her treatment strategy accordingly. This focus on assertiveness may also have the concomitant effect of reducing depression, as well as increasing the client's perception of an internal locus of control. Conceptually, this approach may be viewed as cognitive restructuring through skill-building. That is, through the training of specific behavioral skills, externally controlled persons should alter their self-perceptions, thus increasing the perceived contingency between their responses and environmental consequences.

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1. Jackson, D. N. Personal communication, March 5, 1976.

2. Nowicki, S., & Duke, M. P. A locus of control scale for noncollege as well as college adults. Unpublished manual, Emory University, 1972.

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TABLE 1

Sample Differences by Sex on the ANSIE, DI,

and Assertion Inventory

Measure	Females					Males				
	$\bar{X}$	SD	df	t	p	$\bar{X}$	SD	df	t	p
ANSIE										
Psychiatric	18.35	5.87	67	8.03	.0005	14.20	5.74	88	6.02	.005
College	7.98	4.5				7.76	1.86			
DI										
Psychiatric	23.90	4.41	67	7.41	.0005	19.12	11.48	88	7.90	.005
College	8.22	5.63				7.03	1.75			
Assertion Inventory:										
Discomfort										
Psychiatric	109.50	32.12	63	1.99	.025	99.00	22.91	88	1.25	.10
College	95.37	27.69				91.85	9.56			
Assertion Inventory:										
Response										
Psychiatric	114.57	25.64	61	1.66	.10	116.07	17.39	88	1.25	.10
College	105.92	18.49				109.63	7.91			

TABLE 2

ANSIE-DI, ANSIE-Assertive Inventory

Correlations for Psychiatric and College Samples

Measures	n	r	df	t	p
ANSIE-DI					
Psychiatric					
Males	25	.30	23	1.52	.10
Females	21	.47	19	2.29	.025
College					
Males	67	.17	65	1.39	.10
Females	49	.62	47	5.42	.0005
ANSIE-Assertion Inventory: Discomfort					
Psychiatric					
Males	23	.15	21	.70	.25
Females	16	.68	14	3.47	.005
College					
Males	67	.21	65	1.73	.05
Females	49	.45	47	3.45	.005
ANSIE-Assertion Inventory: Response Probability					
Psychiatric					
Males	23	.36	21	1.77	.05
Females	14	.52	12	2.11	.05
College					
Males	67	.34	65	1.45	.10
Females	49	.40	47	2.89	.005